

Physical Activity and Primary Cancer Prevention in Low Resource Settings: What works?

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Outline

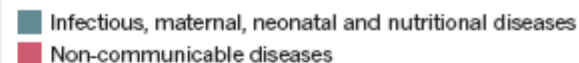
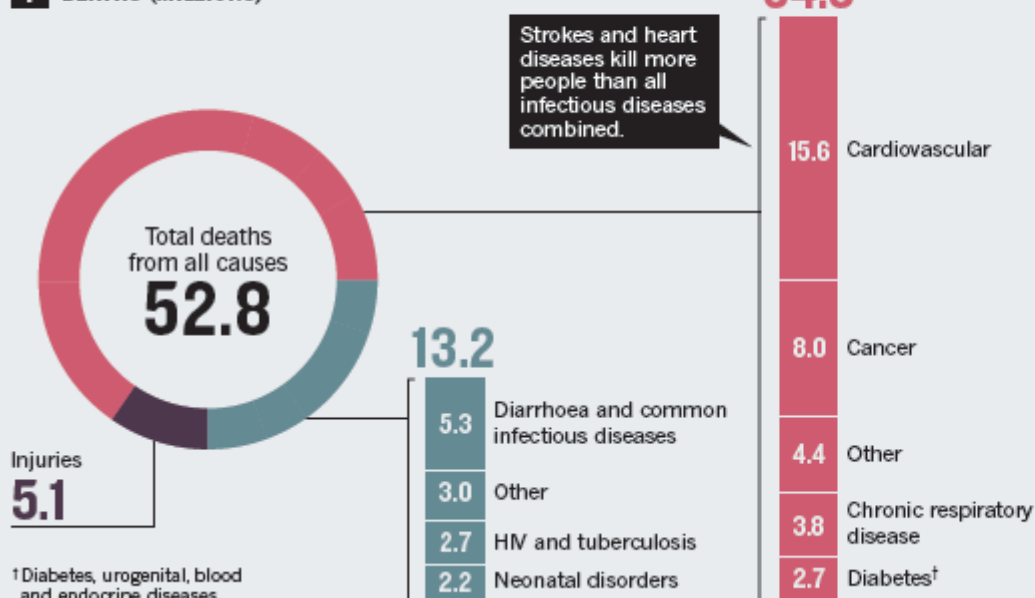
- Physical Activity and Cancer Risk
- Physical Activity and Cancer Risk Potential Pathways
- Physical Activity Recommendations for Cancer Prevention
- Effective Physical Activity Approaches and Interventions
- Key Challenges

NCD Funding

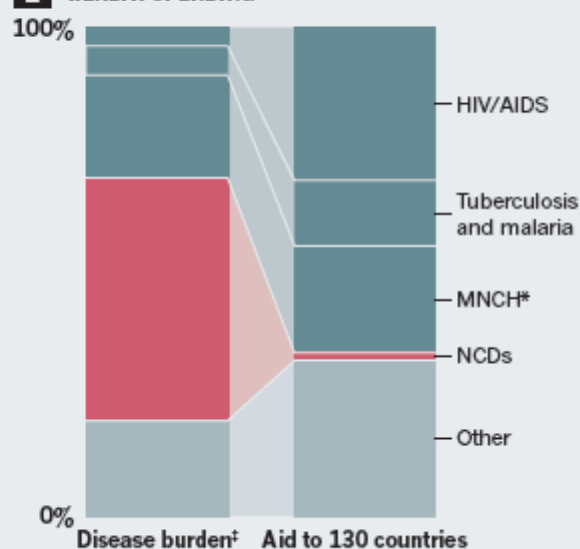
DEADLY AND NEGLECTED

Non-communicable diseases (NCDs) such as cancer and diabetes caused more deaths and disabilities in 2010 than did infectious ones, but received disproportionately low investment.

1 DEATHS (MILLIONS)



2 HEALTH SPENDING



*Maternal, newborn and child health.
[‡]Years lost to premature death and disability.

Gostin LO. Healthy living needs global governance. Nature, 2014; 511:147-149.

Physical Activity and Cancer Risk

- Regular moderate and vigorous physical activity has been linked to decreased cancer risk^{1,2}.
- Average risk reduction of about 20 to 30%².
- The evidence for this casual link is stronger for certain types of cancer^{1,2}.

Cancer Site	Risk Reduction	Level of Evidence
Colon	20-25%	Convincing ^{1,2}
Breast	20-30%	Convincing ¹
Endometrium	20-30%	Probable ^{1,2}
Prostate	10-20%	Possible ¹
Lung	20-40%	Limited Suggestive ²
Ovary	10-20%	Possible ¹
Pancreatic	40-50%	Limited Suggestive ²
Gastric	30%	Possible ¹

Physical Activity and Cancer Risk: Potential Pathways

- Physical activity is thought to decrease cancer risk by²:
 - Decreasing adiposity,
 - Decreasing certain types of hormones,
 - Changing biomarkers and insulin resistance,
 - Improving immune function,
 - Reducing inflammation.

Physical Activity and Cancer Risk: Potential Pathways

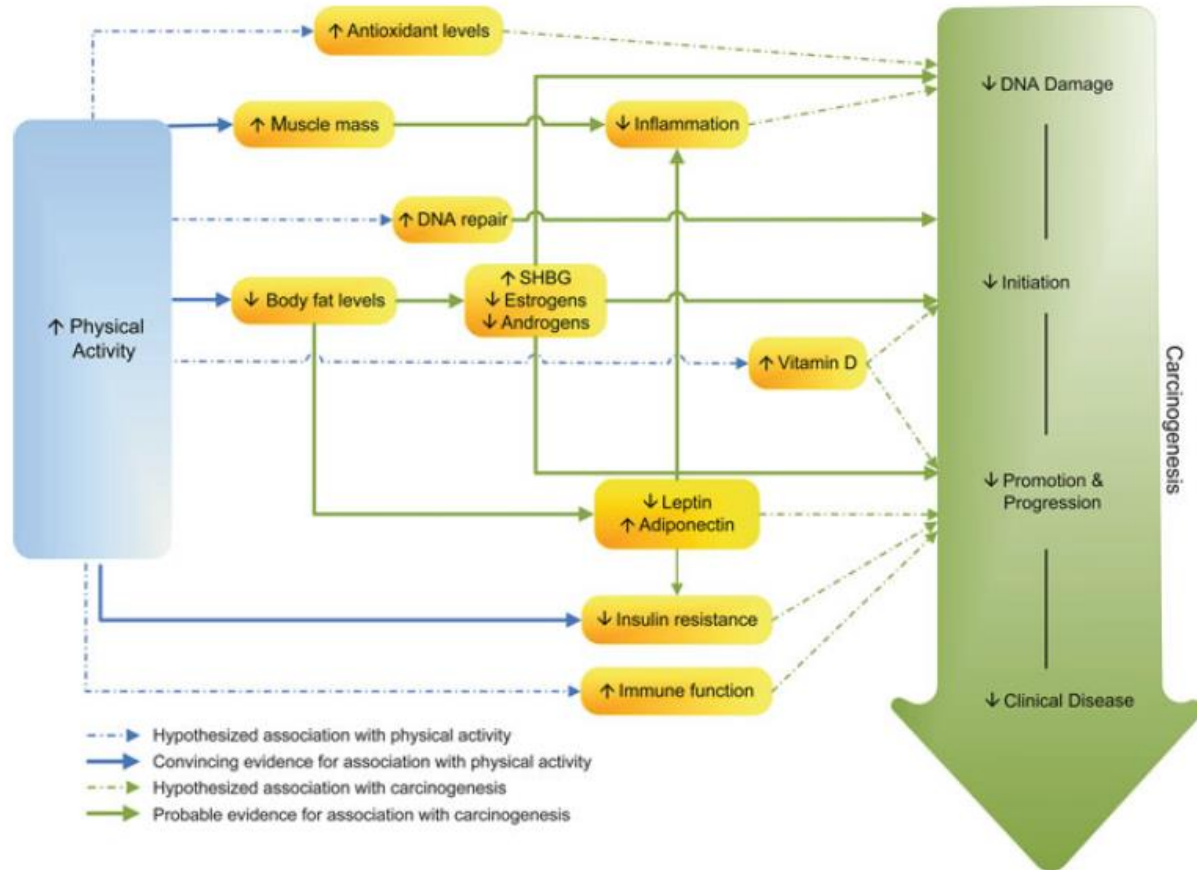


Figure from: Steindorf K, Leitzmann MF, Friedenreich CM. Physical Activity and Primary Cancer Prevention. In C.M. Ulrich et al. (eds.), *Exercise, Energy Balance, and Cancer*, DOI 10.1007/978-1-4614-4493-0_6, © Springer Science+Business Media New York 2013

Physical Activity and Cancer Risk: Research Gaps

- Need to determine type, dose, and timing of physical activity interventions associated with cancer risk reduction^{1,2}.
- Need better methods for measuring sedentary behavior and further investigation of the actual impact of inactivity on different types of cancer^{1,2}.
- Study designs combining exercise and diet for cancer prevention across multiple types of cancers^{1,2}.
- Association between physical activity and cancer risk for most cancer sites remains unknown^{1,2}.

Physical Activity Recommendations for Cancer Prevention

- American Cancer Society³:
 - Adults – 150 minutes of moderate or 75 minutes of vigorous physical activity per week,
 - Children and Adolescents – 1 hour of moderate or vigorous physical activity per day,
 - Limit sedentary behavior.
- American Institute for Cancer Research⁴:
 - Be physically active for at least 30 minutes every day,
 - For maximum health benefits 60 minutes or more of moderate or 30 minutes or more of vigorous physical activity per day,
 - Limit sedentary behavior

U.S. Community Preventive Services Task Force

The Community Guide⁵

- The Community Guide includes systematic reviews focused on increasing physical activity behavior in the following areas:
 - Behavioral and social approaches
 - Campaigns and informational approaches
 - Environmental and policy approaches

The Community Guide⁵ : Behavioral and Social Approaches

- Recommends individually-adapted health behavior change programs:
 - goal-setting and self-monitoring ,
 - building social support,
 - behavioral reinforcement,
 - problem solving, and
 - relapse prevention into sedentary behavior.
- Recommends social support interventions in community settings:
 - Creating buddy systems, walking groups, social support contract to increase accountability.
- Recommends enhanced school-based physical education
 - Instructional strategies to increase physical activity,
 - Lesson plans that incorporate fitness and circuit training activities

The Community Guide ⁵ : Campaigns and Informational Approaches

- Recommends community-wide campaigns:
 - Involve multiple community sectors,
 - Include highly visible, broad-based, multicomponent strategies,
 - May also address other disease risk factors such as diet and smoking cessation.

The Community Guide⁵ : Environmental and Policy Approaches

- Recommends community-scale urban design:
 - Walkability issues (e.g. Proximity to stores, jobs; continuity and connectivity of sidewalks; aesthetic and safety);
 - Zoning regulations, building codes to promote designs supportive of active lifestyles.
- Recommends creating or enhancing access to places for physical activity, combined with informational outreach:
 - Creating walking trails, building exercise facilities, providing access to existing nearby facilities.
- Recommends street-scale urban design land-use policies:
 - Policy instruments such as building codes, roadway design, and environmental changes;
 - Design components including improved street lighting, increased street crossing safety, traffic calming approaches (speed humps, traffic circles), street landscaping.

Cancer Control Planet⁶ : Effective Physical Activity Interventions

- Program Characteristics:
 - Multiple supervised exercise sessions (e.g. weekly, biweekly, monthly) of 60 to 90 minutes;
 - Group meeting sessions of 60 minutes;
 - Telephone support calls;
 - Interactive technologies – mobile phone, web-stides;
 - Intervention materials (videos, workbook, flyers, pamphlets);
 - Community campaigns: paid newspaper, TV and radio advertising, weekly press conferences, worksite programs, website exposure, and other public health education programs implemented by physicians, health professionals, and ministers.

Key Challenge

Striking a balance between...

- What works (is effective);
- What is feasible given the available resources;
- What are the needs of the local community and target audience.

Integrated Research-Practice Partnership (IRPP)



IRPP Examples



Lessons Learned

- Community participation key;
- Stakeholders;
- Access, Access, Access;
- Resources;
- Political will;
- Whose priority?
- Flexibility;
- Sustainability and Funding!

Summary

- Physical activity and inactivity linked to decreased cancer risk;
- Several strategies and approaches have shown effectiveness;
- Challenge to balance effective approaches, existing resources, community needs;
- More of the same not an option.

Questions? Comments?

Thank You!

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